The Builder.

SATURDAY, NOVEMBER 25, 1854.

NOTWITHSTANDING the absorption of public attention by the frightful war in which we are engaged, evidences appear in various quarters of coming endeavours to obtain means for the better regulation of the internal economy of the metropolis, and to effect improvements in its streets and buildings. Recent parliamentary returns have made evident the extraordinary manner in which the metropolis is now governed, and the evils which result from the hosts of uncombined authorities who now discharge that office. It is high time something should be done, with due reference nevertheless to the representative principle, to bring about united and intelligent action.

Most singular it is to find that men in a corporate capacity, worthy, excellent men in the main, who would be scandalized at the idea of an unpaid bill, and look with contempt upon the improvidence of those who will not take the means necessary to provide for their next quarter's rent—that these very praiseworthy and in some respects model men, will yet, when they get banded together in any little official linkwork, straightway forget their principles, and behave like a parcel of improvident scapegraces. That is to say, instead of acting upon the common-sense principle of ordinary life, looking forward to make the best of the future, by studiously avoiding every course or track which the past has warned them will lead to danger, they are content to scramble through the difficulty of the day, leaving the morrow to take care of itself. Thomas Carlyle has said somewhere, that "experience takes dreadfully high school wages." We commonly take rather good care of our costly purchases of whatever sort, but it would appear that schooling is in great measure lost upon the magnates who control parishes and towns. Else why should cholera, which has over and over again given notice of the causes which provoke and feed it, be once more a sound which fills the stoutest with dread, and a presence which has smitten thousands, who have succumbed to its influence, and been laid in a premature grave? Just because we think of reforms only when the scourge is upon us; and, like the debauchee, the moment health returns, we are back to revel in our filthy ways. There has been a Smoke Act passed, which is yet in great measure inoperative; and large sums of money have been spent on a system of sewerage which is notoriously inefficient.

There are two places in the city of Paris where the visitor can command most superb views of that magnificent capital. On the one hand, the grounds of Père la Chaise; on the other, the summit of the Triumphal Arch. Before you lies the basin of the Seine, through which its waters roll in limpid purity. As far as the eye can reach from either point is a dense mass of human habitations, but nowhere are they hidden from the sight by a pall of smoke, and nowhere is the sky concealed until it dips to the horizon. There are two places also from which a panoramic view of unexampled magnitude can be obtained of the "nation of London." Standing on Primrose-hill on a glorious autumn day, or on the knoll near the Crystal Palace, at Sydenham, when the sun is riding in mid-heaven, and what do we behold? The largest city of the greatest and most intelligent people in the world, inhabited by a population of itself a sovereignty, and whose wealth no arithmetic can compute, content to live in an atmosphere compounded of the filthiest vapours, depressing to the spirits, destructive to property, and in many respects very fatal to life. How comes it that this is the case? Simply because there is no controlling power directed to the enforcement of required precautions, or next to none; for the solitary or scattered efforts of a few local authorities are completely nullified by the apathy of those surrounding them, who cannot be stirred into exertion till death taps at their door.

The late attack of cholera has shown the good effects of even a partial improvement steadily carried out. The "City" has escaped almost harmless, thanks to the vigorous measures adopted by the authorities within their bounds. Not that the City is a model in all respects: so long, for example, as there are in existence such things as the Paternoster-row nuisance, rivalling in intensity the most stifling and malarious stenches of Bermondsey, it is not what it ought to be. It is really surprising that the works to which we have alluded, are allowed to be carried on in such a quarter. No one who has the misfortune to be condemned to pass daily under the shadow of St. Paul's, can require an explanation of our meaning. There is a tallow-melting establishment in "the Row," whose chimney belches forth an atmosphere so baneful, that strong men sicken under its influence, and every one hurries past the sphere of its influence with the energy imparted by fear of contagion. There is another poison factory of this sort somewhere within range of the Euston-square station. This seems, however, to choose night for the time when it shall vomit its most pestiferous exhalations, as any unfortunate wight who has occasion to traverse an arc of its circle, bitterly experiences. Add such things as the untrapped sewers of our defective drains, the shambles in the densest centre of our commerce, and the over-crowded and ill-constructed habitations, to the thousand and one varieties of abominable impurities emitted from the processes carried on in the buildings which stud every nook and corner of the metropolis, and it will seem no wonder that disease and death stalk round our dwellings.

We have no wish that the Legislature should violently interfere with men's vested rights, but there is a required exercise of authority, which, if it had been timeously exerted, would have prevented the erection within certain limits of certain works which are now established. Again, there are other evils which, if they can plead their ancient establishment in a position where the city has grown around them, ought yet to be removed with a strong hand for the safety of the Commonwealth. Why, for instance, should not London, at once and for ever, abolish its scattered shambles, and erect a fresh system of *abattoirs*, resembling those at Montmartre, in Paris? Edinburgh has copied these institutions with the happiest effect; and there is no good reason why it should not be done here. So long as London suffers an annual decimation in many quarters, expense should not be an element to create a moment's pause. Those whose avocations compelled their residence in town during the past summer, wandering through streets reeking with the odours of unflushed drains, ere the grateful rain-shower gave a moment of relief, were little surprised at the progress of the fatal disease. Men began to think when the tap of the coffin-maker's hammer was heard at the corner of every street, when the funeral-bell was always tolling, when the hearse was in every thoroughfare, and the only thriving men seemed to be the undertakers, of that ancient and dreadful plague so vividly depicted by Defoe, when the grass grew in the streets of London, and the living could not bury their dead. Every one who has a shadow of authority in his locality should recollect that if we are emerging from terror we are only exchanging the evils of one season for those of another, and that it behoves all officials to see rigidly and perseveringly carried out within their bounds the powers—limited enough, it is true—with which the law has armed them. It is to be hoped that ere long we shall see some sufficiently comprehensive scheme devised and authorised by the Legislature for the proper regulation of the internal economy of London.

Sir William Molesworth has signified his intention to submit to Parliament early in the ensuing session a Bill for the amendment of the Acts now in force for regulating the construction and use of buildings in the metropolis and its neighbourhood, and has sought the opinion of the district-surveyors, severally, upon certain points which have been pressed upon his attention. The chief of these are,—first, whether or not it be true, as some have suggested, that the provisions of the existing Acts have been a chief cause of the confined and unhealthy dwellings of the poor, and have, generally, retarded the architectural improvement of the metropolis; and, secondly, as to the desirability of substituting for the present existing tribunal for the disposal of cases under the Buildings' Acts, an open court with summary jurisdiction; the decisions to be pronounced, and recorded by a registrar. We shall take another opportunity to discuss these and other points connected with the matter: all will agree in desiring such a court: the question is as to its constitution. A committee of the Middlesex magistrates, we may add, have been collecting information touching the working of the present Acts, and the alterations desirable, and will, we suppose, make a report for the assistance of the Government.

Amongst the most recently suggested schemes of improvement, we must mention the designs which were submitted a few days ago to Sir William Molesworth (in his capacity of Chief Commissioner of Works), for the erection of an extensive pile of buildings for Government offices at Downing-street.

The design is by Mr. John Tarring, architect, and contemplates the removal of the buildings between the Horse Guards and Great George-street, Westminster, as far as Charles-street. It is also proposed to remove the block of houses between King-street and Parliament-street, although not absolutely necessary, to open the thoroughfare, and improve the appearance of the new buildings. Dover House, which is situated between the Horse Guards and the buildings occupied by the Board of Trade and Council-office, it is suggested should also be removed, in order to form a public entrance into St. James's-park, instead of a passage through the Horse Guards as at present: this would have the effect of giving a good view from the park of the Banqueting-house, Whitehall.

The block of buildings now occupied by the Council-office and Board of Trade, as refaced by Sir Charles Barry, would remain, and is taken as the basis of the new design: it would form one wing of the façade towards Whitehall: a similar wing would extend from about Fludyer-street to Charles-street, the intermediate space between being filled up with a grand centre of considerable height, and a lofty arched entrance. The whole frontage would be about 700 feet. On the north side facing the Horse Guards, and the south side facing Charles-street, the buildings would be carried down at right angles into the park, to a distance of 400 feet, and have in each front a centre and arched entrance. The front in the park looking westwards, would be similar to the front in Whitehall, and the whole

would form an oblong pile of building, 700 feet by 400 feet, with four façades.

The interior would be divided into three squares by two rows of buildings running parallel with the north and south sides: the centre of these squares would be the largest, and there would be an archway in the middle of the north and south sides of it, in a line with the archways in the flanks of the buildings. The cost has been estimated at nearly 700,000*l.* and to meet the financial difficulties started by Sir William Molesworth, the parties who submitted the plans, offered to carry them out, and present the buildings to the Government, on condition of receiving 32,000*l. per annum* for fifty years. It is stated that the Government are now paying nearly 20,000*l.* a year for rent and repairs of disconnected and inconvenient buildings. We shall probably give our readers an opportunity to judge of the effect of the proposed pile. Without reference to the character of the buildings, we must say that the proposal to bring together the various Government offices, and to make the whole an architectural adornment of the metropolis, has our full concurrence. It is evident from the statement of Sir William, that something is about to be done in this direction, and it is of the utmost importance that it should be looked at in a comprehensive spirit.

There is evidently a movement in London.

PARIS.

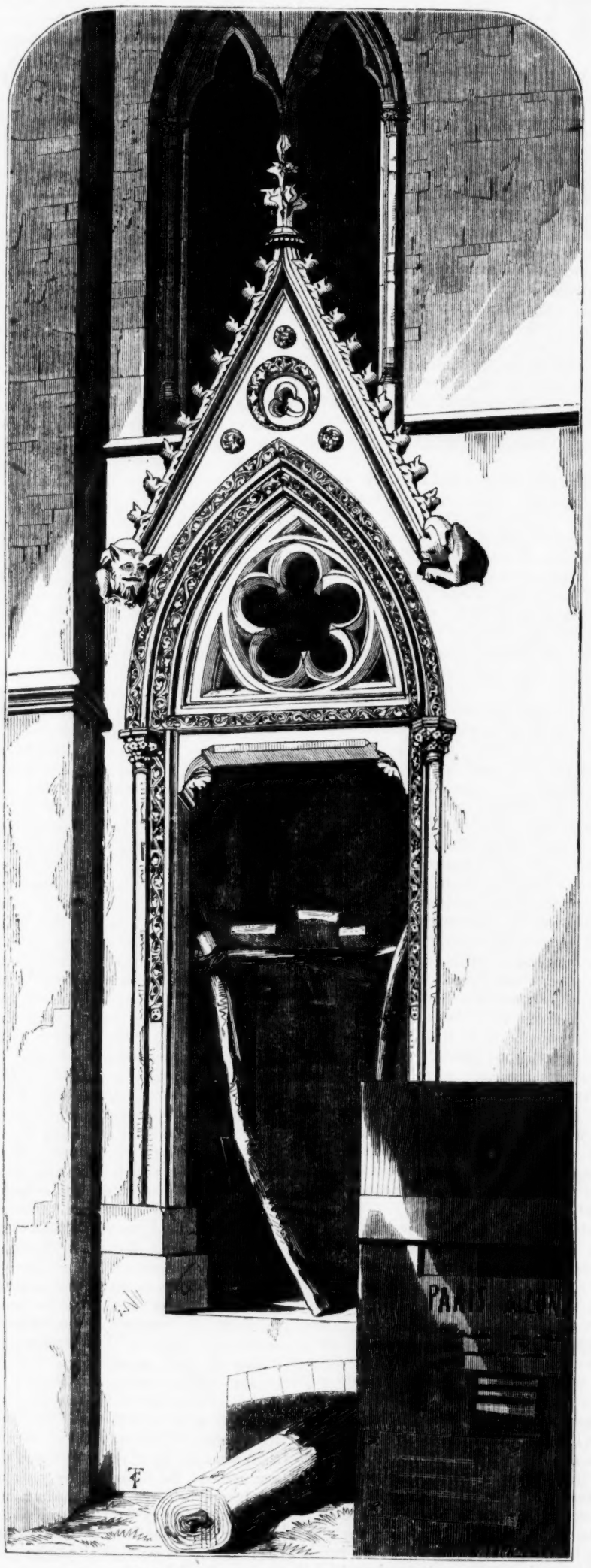
The new church of St. Clotilde, at Paris, is rapidly advancing towards completion. It is a large church, in the Pointed style, with the usual nave and aisles, transepts, choir, numerous chapels, and a pair of western towers and spires. It shows to what a height copyism is still practised, yet still there are some points about the building worthy of notice. The *bas-reliefs*, for instance, in the interior, illustrative of the life of Our Saviour, are good; and the doorway, which we engrave this week, has something novel about it, and looks very well in execution.

We learn from *Galignani* that workmen have commenced the construction of a bridge over the Seine, between the Pont des Invalides and the Pont d'Iéna, starting from the Rue de la Vierge on the left bank to the opening on the right bank opposite the Allée des Veuves and the Rue Jean Goujon. It is to have five arches, and to be finished in six months, for the Universal Exhibition.

The same journal says, that the lining with concrete of the large basin of the Rond du Roi in the Bois de Boulogne having been completely terminated, water has been let in, and that not a drop of water escapes. Part of the two rivers which wind round the islands has also been finished, and has received water. The hand-posts, indicating the different roads which are being established, are to be surmounted with gas-lamps. In addition to this, 300 iron seats are being fixed in different parts, and shrubs are being planted.

We may add from *La Presse* that the new stone bridge of Austerlitz, consisting of five arches, has been opened to the public. It was on the 7th of August that the demolition of the old bridge was commenced, and in ninety-two days the old bridge was swept away and the new one substituted.

Harrow.—It would not be altogether out of place to call the attention of capitalists and builders, through the medium of your useful paper, to the favourable opportunity there is at this place for investment, with every chance of a good return. Houses of every description are much in demand in this locality, consequent chiefly on the healthfulness of the situation, its proximity to the metropolis, the advantages to be derived from Harrow School, and also the privilege offered by the London and North Western Railway Company, viz. of a free first-class pass to and from London for eleven years to residents of new houses worth 50*l.* a year. We have now excellent drainage, a good supply of water, and the immediate prospect of having gas.—Progress.



DOORWAY, ST. CLOTILDE, PARIS.

MR. RUSKIN'S LECTURES ON DECORATIVE COLOUR AT THE ARCHITECTURAL MUSEUM.

1. THE DISTINCTION BETWEEN ILLUMINATION AND PAINTING.

MR. RUSKIN commenced by stating, that he was not going to read a paper, or to speak from notes, and it was a mistake in the advertisement to say that he intended to deliver a lecture. It was not a lecture, but a talk, and his object was to address himself to the students present, and place before them, in a familiar way, things which were useful.

Before entering upon his subject, however, he wished to glance at one or two historical points, with the view of explaining the examples he proposed to set before them. In these days it was a very common practice to laugh at the middle ages, and hold them up to ridicule. Truly, they were ridiculous in many senses, but certainly they were not ridiculous in their way of writing. They did not write in those days so much as we do now, but they wrote much better when they did write. Even so far back as the seventh century, the Saxon writing began to acquire character and dignity, though the writing of that period differed materially from anything that we did now. The specimen he now submitted (an initial letter) was written as an ornament to a psalter belonging to a lady who died in the year 656, St. Salaberga. It would be perceived that the colours employed in writing in that day, were simply black, yellow, and red. The design in the example was a continuous scroll, beginning in a bird's beak, and terminating in a sort of yellow dragon. It never encountered itself at a turn, but it glanced off and met again in some different part of its progress, and never doubled simply upon itself. Such was the general character of the MS. of that century. It was not very easy to imitate. He had himself tried it, but found it difficult, and to do it well, considerable practice would be required. He wished, however, to draw attention to the fact that there was a character and a finish about this writing which was not found in common penmanship.

From these yellow and black scrolls they went on improving until the time of Charlemagne, when the art of illuminated writing received a great impulse. Then more and more colour was introduced in the finish, and greater variety in the outline. It had been frequently said that Charlemagne could not write: true, he could not write in what would be called writing now; for what we now understand as writing would not have been called writing in the days of Charlemagne. Here was an example of the writing of that age. This (the specimen exhibited) was written in the eighth century, and it was the beginning of one of the books of the Gospel. It would be observed that more colour was introduced about this time; and they would notice how, it was stolen in, as it were, upon the gold. But though it was said Charlemagne could not write, though he could not write as we write now, yet he could write after a fashion. He always carried tablets about with him, upon which he from time to time put down anything he desired to remember. He could not, however, write like the specimen the meeting were now examining; but he employed those who could, and paid great respect to them. Immense respect was paid to the writers of those days. He (the lecturer) would much like that respect paid to the art of writing now. As showing the kind of respect which this art commanded in the Middle Ages, he would read an anecdote respecting an eminent writer who lived in the time of Charlemagne. "There was in the monastery of Arnisberg a writer named Richard, an Englishman, who had with his own hand copied a great number of books, hoping to receive in heaven a recompense for his labours. When he quitted this life his brother monks buried him in a place of honour. Twenty years afterwards his tomb was opened, and his right hand was found in as perfect a state of preservation as though it were alive, and appeared to have been recently cut off from an animated body, while all the rest of the corps was dust. This hand is shown as a great miracle to this day in the monastery of Arnisberg." This showed the honour with which a good writer was regarded at that period; and not only was the art honourable and profitable to those who practised it, but its effect was profitable and valuable to others. We had an instance of this in the history of one to whom we were indebted for all our English literature—he alluded to King Alfred. Alfred himself was honoured in France for his writing; and the best writing of that period came from France. It was well known that the French princess Judith, who was Alfred's stepmother, took great pains to teach him; but it would seem that he had naturally no more taste for study than other children, for it was recorded of him that he lived to twelve years old before he was taught to read. How he was induced to learn was, according to Mr. Sharon Turner, in this wise: "When Alfred was twelve years old, she [Judith] was sitting one day surrounded by her family with a MS. of Saxon poetry in her hands. With a happy judgment she proposed it as a gift to him who would the soonest learn to read it. The whole incident may have been chance play, but it was fruitful of consequences. The elder princes,—one then a king, the other in mature youth or manhood,—thought the reward inadequate to the task, and were silent. But Alfred, captivated by the prospect of information, and pleased with the beautiful decoration of the first letter of the writing, inquired if she actually intended to give it to such of her children as would the soonest learn to understand and repeat it. His mother repeating the promise with a smile of joy at the question, he took the book, found out an instructor, and learned to read it. When his industry had crowned his wishes with success, he recited it to her. To this important though seemingly trivial incident we owe all the intellectual cultivation and all the literary works of Alfred, and all the benefit which by these he imparted to his countrymen." In this case the beautiful initial letter was the attraction—a letter probably like that which he (the lecturer) had just exhibited as characteristic of the date of Charlemagne. This was the first inducement to study with our English Alfred, and he was not quite sure whether it would not be better generally that children should remain until they were twelve years of age, and then be tempted to read by such inducements as these, rather than that we should go on impressing upon their minds in infancy the enormous fallacy that "A" ever was, or under any circumstances could become, an apple-pie. The main idea of the age of which he was now speaking, however, was that a book was a noble and a sacred thing, to be respected and revered. It became precious because it was written with so much labour and with so much beauty: and then came the idea of its sanctity. It was noble, inasmuch as it was the means of making human thought—the most transient and evanescent of all things—the most permanent of all things. Well, this being the idea of books, which then obtained in men's minds, they worked, and worked on, to attain greater excellence in their writing, by systematizing their colour more and more, until they arrived at a perfect system, which, however, they might have found out long before they did, and which it was strange that we ourselves had not discovered. It was strange that those who were familiar with the Bible, wherein they were told that the colours directed to be used for ornamenting the tabernacle, were gold (or yellow), and blue, and purple, and scarlet, as being those calculated to form the basis of the richest, most harmonious, and glorious combinations, should not have adopted them in all cases where such results were required. The thirteenth-century people, however, had not, it appeared, derived their knowledge from the Bible; they went on working and experimenting until they found it out. Here (exhibiting it) was a Bible of the year 1220: it was but a common example, but worth exhibiting, on account of the clerkly manner in which the letters were written. He now came to the middle of the thirteenth century, when an immense development of the art took place. It was well known that the whole spirit of the middle age was to be found in the writings of Dante: there it must be sought. Dante was the prophet of the middle ages. In his "Purgatory" he introduced a description of certain people suffering the penalty of pride. He represented them as being crushed under great stones, in the position of which we have so many examples in the architectural decorations of that period, as in figures bearing corbels, brackets, &c. It was curious to see what Dante appeared to think most calculated to create the feeling of pride in the human breast. It was not valour, nobility, or success in battles, but excellence in writing. These were his words:—

"Listening, I bent my visage down, and one
(Not he who speaks) twisted beneath the weight
That urged him, saw me, knew me straight, and call'd,
Holding his eyes with difficulty fix'd
Intent upon me, stooping as I went,
Companion of their way. 'O!' I exclaim'd,
'Art thou not Oderigi? Art not thou
Agobbio's glory?—glory of that art
Which they of Paris call the limner's skill?'
'Brother,' said he, 'with tints that gayer smile,
Bolognian Franco's pencil lines the leaves,
His all the honour now—my light obscured.'"

The line which is given by Cary (for this is his translation)—

"Which they of Paris call the limner's skill,"

is not properly translated. The word which in the original is "*alluminare*," does not mean the limner's art, but the art of the illuminator — the writer and illuminator of books. The passage gave a peculiar interest to the illuminated works of the date in which Dante wrote. This period—the middle of the thirteenth century—was marked also by the career of St. Louis, and the next example which he (the lecturer) had to produce, was from a psalter, which was peculiar in having, in addition to the names of the saints, the names of the members of St. Louis's family, with the date of their death, but not of that of St. Louis himself. First, there was the name of Count Robert of Artois, St. Louis's brother, who lost his life while charging the Saracens at Mansourah—just as our light cavalry had charged the Russians at Balaklava. There was thus a note of his death which was put down as a sort of martyrdom. Then there were the names of King Philip II. then that of Louis VIII. the father, and of Blanche of Castile, the mother of St. Louis, but not his own. Now Queen Blanche died in 1252, and St. Louis himself in 1270, so that it was evident this psalter was written between those two periods, and the different portions of it at some distance of time from each other. The leaf exhibited was one of the common leaves taken from the beginning of the book. The flourish of the initial letter he had enlarged, in order to show more clearly what sort of a thing it was. The prevailing colours were blue, purple, and scarlet, with gold: leaves were introduced, and the ornament, it would be perceived, was constantly changing in form and in the curve and lie of the leaf. If there were no change there could be no life. That might be taken as the great rule of art. He might, while upon this point, remark, that one of the great evils of the day was an intense love of symmetry. Nothing in nature was perfectly symmetrical. No two sides of any animal, tree, or other natural object, were exactly alike. Try to brush your hair exactly alike on both sides, and you will find it could not be done. A statue to be graceful must not have the arms and legs in the same action on both sides; they must be in different actions. In nature they always *were* in different actions. In sculpture, in painting, as in everything else, in art as in nature, without dissimilarity there could be no grace. The next specimen he would present to their notice was a capital letter at the beginning of a psalm. In this they would observe, that animals, as well as natural leaves, were introduced. Up to this period nature had not been followed in writing to the same extent, but had been treated in the manner represented in the previous examples. The little Bible he had in his hand, in which the initial capital, of which the letter he exhibited was an enlargement, occurred, was a good example of the style of writing of the year 1230. Here, they would observe, the prevailing colours were the same, blue, purple, and scarlet, with white introduced at intervals, like beautiful pearls. It was a great point in the arts—which many did not seem to be aware of—to know how precious white was. Here were two of the introductory leaves of a psalter which he wished to bring to notice, on account of the human faces intro-

duced in the ornament of the letters. One of these illuminations represented Solomon, having been named David's successor, being made to ride upon the king's own mule, and the burial of King David. Both of these examples were remarkable for the beauty of the faces. Outline and colour were, however, the principle of these examples; beyond that there was no imitation of nature. But from this time they began to enrich their MS. more and more: the systematization of colour went on until they reached a point of enormous luxury. With that luxury of ornament and colour came carelessness and the gradual degradation and decline of the art. The MS. now produced, one given to Queen Blanche, in the sixteenth century, exhibited that carelessness and degradation in a marked degree. The art having reached its culminating point about the middle or towards the close of the thirteenth century, from that period began to decay, the principles of it having been lost sight of in the attempt to attain greater luxuriousness of drawing and effect, those principles which he insisted upon as the fundamental principles of the art being clearness of outline and simplicity of colour, without the introduction of light and shade. He had said that writers were not reverenced sufficiently in these days,—he said also that neither were painters revereneed as they ought to be. It was a very difficult thing to paint well—much more so than most people imagined, and to lay on light and shade properly, to realize and to convey upon canvas a thorough impression of the varying effects of sunshine and shadow, in the colour of the air, and in the tints given to every object in nature, was a far more difficult thing than most men were capable of accomplishing. This was the reason why we had so few really good painters, and so many bad paintings. There had been never more than three or four really good painters in the world in any one age, and no wonder, for it required talent of a very rare order to be a painter in the higher sense of the term. It was as difficult, and required a natural capacity as extraordinary, to be a good painter, as it did to be a Duke of Wellington; but though it was necessary to possess a first-rate capacity, and talents of the highest order to be a painter, it was not so to enable persons to outline truly from nature, and to lay on simple colour beautifully. This also was a peculiar gift not possessed by every one; but it was a gift which hundreds of persons possessed naturally. Amongst dressmakers there were many who instinctively, as it were, evinced an aptitude at arranging flowers and putting on colour, so as to throw in depth or light as required, for the purpose of producing harmonious combinations, and the instinct to arrange bouquets of flowers so as to combine in harmony the various hues was common. But the mischief was, that when young people were found to possess the talent of outlining or arranging colour in more than an ordinary degree, they were pressed to learn to draw, though they might not have brains enough ever to draw well. He would urge upon those of his audience who had the the gift of colour not to allow it to be checked or run away with by pursuing that which it was more than doubtful that they would ever succeed in. There might be first-rate art exhibited in the pursuit of colour only. The field was narrow, no doubt; but if a man made up his mind to be an illuminator—if he possessed the gift of arranging colour, and his opportunities and time did not admit of his making himself a good painter, then let him take up this principle, that every form he drew must be in pure colour, without shadow. He might use what colours he pleased, but let him not resort to shadow in any shape—the object should always be represented in gradated pure colour, with true outline. The first step was to be perfect master of outline. Outline was susceptible of great beauty and infinite variety; but it must be firm and true; not thickened on the side opposite to the light, with a view of showing something like a shadow. It must not be shadowed at all. Nothing could be more absurd than to attempt to throw in shadow by thickening the line, for if the outline was ever lost, it would oftener be on the dark side than on the light side. Besides, the veracity of the line would lie within the compass of a hair. It must be right or wrong. If right, the thickening of the line destroyed the correctness, and the thickness must be removed before the outline could be true, the truth lying somewhere within the thick line. The first thing to practise was perfectly faithful outline, and an important thing to know was how much could be expressed by it. Here was an example of the fourteenth century, containing nothing but outline. They would observe that there was a blue bird in the composition, which appeared all but animated, because it was as far as it went so beautifully drawn. This example, and some of the others, would however appear to those who were close to them somewhat coarse, in consequence of their having been considerably enlarged from the original MS. But there might be as much perception of nature in working out these mere outlines as in working out a fully shadowed drawing, like one he now exhibited (a bunch of leaves very far inferior as a work of art to either of the examples of MS. shown), and it was much better that they should possess, for the purposes of decorations generally, the daring conventionality of colour shown in other specimens he submitted to them with pure outline, than that they should be imitators of the spurious examples produced by painters who could not paint, and which violated the eye wherever they were seen. He had said that the peculiar character of the decorative work of the thirteenth century, was the introduction of nature, and that was the circumstance that would make it especially agreeable to those who pursued this art now, if it could (as he hoped) be revived amongst us. In practising it, they need not limit themselves to birds and leaves, as in the examples before them, but might avail themselves of every natural object. As soon as they could trace an outline correctly, he wanted them to watch closely every living object around them—groups of children in the streets, leaves, trees, birds, and the animals in the Zoological Gardens; but he would warn them against introducing too much; and when they were painting, let them never introduce the same letter twice, or the same figure or animal twice in the same composition.

Now, what were the fields for an occupation of this kind? This was a serious question, and unless the change took place which he was now striving to bring about, he found himself wedged in between two difficulties. He frequently received letters from persons who said to him, "Build us a house, or paint us a room in this way." The reply he was compelled to make was, that he had not the workmen who could do it; and then it was said, naturally enough, that he was a humbug. He went to the workmen, and they said, "We cannot devote our time to that kind of work; there is no demand for it, and we could not earn our money by it." Now, he had asked the students and workmen to come together there that day, that they might aid him in the attempt to revive the art to which he had been directing their attention, by recommending to those by whom they were employed to introduce this kind of decoration wherever opportunity offered. There was a great field for it in ornamenting the interiors of churches. There was the lettering of the commandments, and the writing over the communion-table, the windows, and other ornamental work, where illuminated letters might be introduced with great effect. The patterns might be perpetually varied, and animals, birds, leaves, trees, and other natural objects, might be made to give life and diversity to them. But he would urge upon them whenever they were required to paint anything in a church to do it as well as they could, and to introduce as much of nature as they could in a graceful manner. Then there was the decoration of rooms,—though upon that point he confessed he saw considerable difficulty. He liked pictures and prints in rooms, and would, as far as he could, induce people to buy them, and the examples he had exhibited certainly would not look well with those. He would say nothing further upon this point, therefore, except that he should like to receive the advice and suggestions of workmen themselves upon it. In the lettering on the outside of shop-fronts, illuminated letters might appropriately be employed, and would form a pleasing change from the dingy appearance which many of the shop-fronts, especially in the metropolis, presented. He would urge upon them, when they had shop-fronts to decorate, to endeavour to induce the shopkeeper to allow them to introduce such letters. He believed the effect would be good, but he was not over-sanguine when he looked at that unhappy thing in Leicester-square, which was abominably ugly, in spite of its colour. Another, and a most important field for the exercise of this art, was the decoration of books. He did not say that every book should be illuminated; some books, as the Bible, should, he thought, be as simple in lettering as possible; but books of poetry or art, which might be very appropriately decorated as suggested. He was anxious to see a taste for decorating books in this manner, because he believed we were falling into a very careless way of regarding our books. It might be, that we had so many books now as compared with what persons in similar positions in life formerly possessed. It had been said that it was better to have a few books than many; he could not say that that was his feeling; he considered it a most delightful thing to have a library; at the same time, he should like people to value and love their books more than they did. The feeling that prevailed in the middle ages with regard to books was, that they were holy things, and those who were employed upon them felt that they were engaged upon a holy work. He would like to bring back something of that feeling, and he would also like to bring back for the workmen the employment of illuminating books, for he thought it must have been a most happy employment. He did not know at what cost now an illuminator might be able to produce a finely-illuminated page. That was a subject on which he was anxious to obtain information. He wanted to have the data, and if the workmen would furnish him with that, he would endeavour to bring the subject before the public. What he wanted was the information to enable him to say, when asked, what would be the cost of illuminating some beloved book, which it might be desired to preserve as a valued work in a family. He thought very many persons would gladly avail themselves of the opportunity, if it were offered them, to have books of this character so decorated to be preserved as heirlooms. For his own part, he would rather have an illuminated book in his library than a picture. He would like to have a book of which every page was a picture. The great point was to make this art of book illumination fashionable; if that were done, it would go on as a matter of course. A new school of art would be introduced; the eye for colour would become disciplined; the perception of truth and form in outline would become disciplined; and the art of painting would be more and more appreciated. A Titian could only be appreciated by those who understood harmony of colour. It was not the extraordinary effects of the light and shade—beautiful though they were—that marked the true Titian, so much as the beautiful harmony of his colours; and by disciplining the eye to those harmonies a feeling would be created in the public mind which was now almost dead. There was another advantage that would result from the revival of this art to the student and the illuminator. He could not imagine a happier life than that which would be led by any person of quiet and studious habits with something like the disposition of the old monks who were the illuminators in past times, while following this occupation. If it were cultivated, a totally new impulse would be given to art in every direction, and possibly also to literature, for people would feel that it was better to have a monument in the shape of an illuminated book than in that of an illuminated window; and many a man engaged in writing a book would feel more interest in his work, and take more care in its composition, if he knew that it was to be beautifully illuminated, to be placed in a library as a beloved thing, to be handed down from father to son, and from generation to generation, than if it were printed in the ordinary way, tossed about by printers' devils, and thrown aside as soon as read. As showing the kind of life he would encourage, he would ask permission to read a passage from Longfellow,

describing the Friar Pacifico transcribing and illuminating the Gospel of St. John:—

"It is growing dark! yet one line more
And then my work for to-day is o'er:
I come again to the name of the Lord,
Ere I that awful name record,
That is spoken so lightly among men,
Let me pause awhile, and wash my pen;
Pure from blemish and blot must it be
When it writes that word of mystery!
Thus have I laboured on and on,
Nearly through the Gospel of St. John.
Can it be that from the lips
Of this same gentle Evangelist,
That Christ himself perhaps has kissed,
Came the dread Apocalypse?
It has a very awful look,
As it stands there at the end of the Book.
Ah me! when I think of that vision divine,
Think of writing it line by line,
I stand in awe of the terrible curse,
Like the trump of doom in the closing verse.
God forgive me! if ever I
Take aught from the Book of Prophecy;
Lest my part, too, should be taken away
From the Book of Life on the Judgment-day."

Then notice the change of feeling—how natural!

This is well written, though I say it!
I should not be afraid to display it,
In open day, on the self-same shelf,
With the writings of St. Thecla herself,
Or of St. Theodosius, who of old
Wrote the Gospels in letters of gold!
That goodly folio standing yonder.
Without a single blot or blunder,
Would not bear away the palm from mine,
If we should compare them line by line.
There, now, is an initial letter!
King René himself never made better!
Finished down to the leaf and the snail!
Down to the eyes on the peacock's tail!
And now, as I turn the volume over,
And see what lies between cover and cover,
What treasures of art these pages hold,
All ablaze with crimson and gold,
God forgive me! I seem to feel
A certain satisfaction steal
Into my heart, and into my brain,
As if my talent had not lain
Wrapped in a napkin, and all in vain.
Yes, I might almost say to the Lord,
Here is a copy of thy word,
Written out with much toil and pain;
Take it, O Lord, and let it be
As something I have done for thee."

He looks from the window:—

"How sweet is the air! How fair the scene!
I wish I had as lovely a green
To paint my landscapes and my leaves!
How the swallows twitter under the eaves!
There, now, there is one in her nest;
I can just catch a glimpse of her head and her breast;
And will sketch her thus, in her quiet nook,
For the margin of my Gospel Book."

This was the kind of life he wished the students of this art to follow. He proposed to leave the various examples he had exhibited in the Museum, that those who desired to do so, might come in if they pleased, and work from them between then and the next lecture. In the next lecture he proposed to explain the general principles of outline, and to exhibit examples; and in the third lecture he intended to explain the principles of colour.

AMERICAN INGENUITY IN STONE, WOOD, AND IRON WORKING.

We have already incidentally adverted to Mr. Joseph Whitworth's special report connected with his visit to the American Exhibition. It is a pity that one so well qualified should have been prevented by circumstances from giving us an elaborate account of Transatlantic advancement in machinery generally. The tiny blue-book, to which we have referred, contains much interesting matter, set forth in that clear, curt style, which may be expected from a practical man who has neither time nor inclination to spin words, but simply to tell you about a bit of mechanism, and how it works. We have selected a few of the heads which bear on building operations. It may be interesting for those engaged in similar operations, to compare the results in the two countries, and notice how nearly every little labour-saving contrivance is made available. Certainly, as Mr. Whitworth remarks, no country has done so much as our own in the most difficult applications of machinery to working in wood,—from Brunel's great and complicated inventions at our dockyards downwards. But it must be confessed that we have been a little slow in adapting it to the numerous minor processes such as are successfully carried on in America by its aid. Doubtless, the peculiarly favourable nature of the patent law to their own citizens, has fostered a multitude of mechanical inventions—the efforts of poor but ingenious men,—which in our island would have been smothered by the costly and cumbrous legal fencework necessary to procure protection. This is now remedied, and we may expect to find under the new patent law an impetus given to a great variety of effective improvements. The law is not in all respects what it should be, but it is a vast boon when compared with the old rules and prices. Brother Jonathan had once a shadowy sort of excuse for pirating books, and charging a British subject sixteen times as much for a patent as he did himself. Now, when we have abolished the one grievance, and are eager to redress the other, he is surely prepared to reciprocate?

Lock-making.—The manufacture of locks appears to be rapidly extending. In an establishment at Pittsburg, employing 350 men in making locks, coffee-mills, copying presses, &c. good work was being turned out. Another at Newhaven, Connecticut, employs about 200 men in making locks and lock-handles. The latter are made of coloured clays, so mixed as to present a grained appearance. They are first moulded by hand, then turned in a self-acting lathe with great rapidity, and are afterwards baked in a furnace. Padlocks are made here of a superior quality to those of the same class imported from England, and are not more expensive.

Saw-mills, Lowell.—The trees sawn up in the Lowell saw-mills, are floated down from the interior of the country by river: they are docked in a basin by the timber-yard, and are dragged up an inclined plane into the interior of the mill as they are wanted. In an upper story are placed two large saw frames, and between them travels an endless chain, running along the shop floor over pullies, and extending down the inclined plane nearly to the edge of the basin. To any part of this endless chain may be hooked another chain, which, being passed round one or more trees, as they lie in the basin, drags them up into the mill, and deposits them alongside the saw frames. Shingles used for covering the roofs and sides of houses are made in vast quantities. A circular saw cuts them 16 inches long, from 3 to 9 inches wide, and of a thickness tapering from $\frac{2}{3}$ths to $\frac{1}{8}$th of an inch, at the rate of from 7,000 to 10,000 per day, according to the nature of the wood. Timber is also cut up into laths, 4 feet long, at the rate of from 60 to 100 per minute, by a circular saw, attended by two men.

Saw-mills, Buffalo.—In these saw-mills, boards are sawn into "sidings," that is, long wedge-shaped boards, for the sides or roofs of houses, by a circular saw, at the rate of 17 feet per minute. The board is introduced at the back of the saw, and moves in the direction in which it revolves. It thus cuts with the grain, and the strength of the cut assists the forward feeding motion of the board. Subdivision of manufacture is advantageously adopted on a system. Many works in various towns are occupied exclusively in making door, window frames, or staircases, by means of self-acting machinery, such as planing, tenoning, mortising, and jointing machines. They are able to supply builders with the various parts of the woodwork required in building, at a much cheaper rate than they can produce them in their own workshops, without the aid of such machinery. In some of these manufactories twenty men were making panelled doors at the rate of 100 per day. Portable sawing-machines, driven by horse power, are commonly used for sawing up logs of wood for fuel, particularly at the various stations on the railroads, where the wood intended for the consumption of the locomotives is stored in piles. The "horse-power machine" consists of a stout frame supporting a railway, about 7 feet long, on which run the rollers of an endless travelling platform. The axles of the rollers are of iron, five-eighths inch diameter, stretching across the rails, but are connected together by a series of links, each about 12 inches long, so as to form an endless chain, which passes over a fixed segment at one end and the chain wheels at the other. The travelling platform is made by planks of wood, about 12 inches broad, $1\frac{1}{4}$ inch thick, fastened transversely to the endless chain. It is inclined at an angle of about 7° to the horizontal line, and the horse being placed on the platform pushes it backward from under him, which causes the chain wheels at the end of the frame to revolve, and the motion thus obtained is conveyed to the circular saw or other machine required to be driven. Some horse-power machines are made to admit two horses abreast. They are found very useful to farmers. When requisite they are mounted on wheels, and may be easily taken from place to place, to saw up trees which could not conveniently be moved entire.

Planing-machines.—A numerous variety of planing-machines are in common use. For flooring-boards, Woodworth's machine is found to answer very satisfactorily. In planing-mills at Philadelphia, are four of them working in one room, side by side: they have three cutters on each horizontal axis, having a radius of 6 inches, and making 4,000 revolutions per minute. The cutters are said to be capable of planing from 2,000 to 3,000 feet of work without being sharpened with the oil-stone, and from 20,000 to 30,000 without being ground. They plane boards 18 feet long, varying in width from 3 to 9 inches, at the rate of 50 feet per minute. At the same time that the face of the board is planed, it is tongued and grooved by cutters, revolving with a radius of about 3 inches, on vertical axes on each side of the board. The chips made by the four planing-machines are driven through large pipes, and fall into a trough about 20 inches wide, running across the room immediately under the cutters. In this trough works an endless chain, in which are fixed wooden scrapers, that carry along the chips as they fall to a recess at the side of the room. Here they are carried off by the scrapers of another endless chain running up an inclined plane. The pullies on which this side-chain works are larger in dimensions than those of the transverse chain, which works inside. The transverse chain thus deposits its chips in the trough of the inclined plane, and they are carried up to a hole in the ceiling of the fuel-room, adjoining the boiler-house: through this hole they fall into the fuel-room, and fill it up, if necessary, to the top. Where an accurately smooth surface is required, Daniel's planing-machine is employed. It consists of an upright frame, in which a vertical shaft revolves, having horizontal arms, at the ends of which are fixed the cutters. The work is carried along on a travelling bed under the cutters, which are driven at a very high speed.

Box-making.—In a box manufactory at Worcester, a machine made on Woodworth's principle planed boards 10 inches wide simultaneously on both sides. Boxes are made in great numbers, from boards which are tongued and grooved by what is called a "matching machine," and then put together as that operation is finished. The tonguing and grooving cutters are fixed in horizontal axes, and the workman passes the boards alternately over the one or the other, as the sides require them to be tongued or grooved. Other varieties of planing-machines are also in use, known by the names of their different inventors. Some of them have fixed, vertical, or horizontal cutters, others vertical or horizontal revolving cutters, and various other combinations, according to the purposes for which they are intended.

Stone-planing Machines.—In an establishment at Washington which has but recently commenced operations, there were two planing-machines and a grinding or polishing machine. Considerable difficulties have hitherto attended the employment of machinery for planing stone, such as granite and stone of similar formation. Here difficulties have, however, been surmounted most successfully by the construction of planing-machines, such as are used in stone works in New York and Washington, in the former of which upwards of 400 men and ten machines are employed. The planing-machine consists of an upright frame, in which revolves a vertical shaft carrying three horizontal arms. At the extremities of these arms are fixed circular cutters, inclined outwards about forty-five degrees from the perpendicular, or about the angle at which the workman would hold his chisel. They are about 10 inches in diameter, and $\frac{3}{4}$ of an inch thick, made of steel and bevelled on both sides, leaving a sharp edge. They are fitted upon axes, and are at liberty to revolve loosely in their bearings as their edges strike the stone. The cutters are carried round the

shaft at the rate of about eighty revolutions per minute when planing freestone, and sixty when planing granite. The stone is moved forward on a bed to which it is keyed: the cutters strike its surface obliquely as they are carried round on the revolving arms, turning at the same time on their own axes, and chipping and breaking off the projecting portions of the stone at every cut. The machine planed the face of a stone slab, 4 feet long and 2 feet wide, in seven minutes. Another modification of this machine, which is not so economical, is employed when it it necessary that the face of the stone be left in lines as it comes from the tool. The stone is keyed in a travelling bed and passed under a frame, in which works a sliding carriage driven by a crank: in this carriage is fixed the circular cutter at the required angle, and as the stone is carried along the cutter is driven backwards and forwards across its face at right angles to the direction in which it moves, and strips off parallel breadths of stone at every cut. The cutters can be used for planing from 300 to 400 square feet of freestone surfaces, and about 150 square feet of granite without being ground.

Stone-polishing Machine.—The stone is polished by a flat circular disc of soft iron, which is made to revolve horizontally. The axis of a disc is fixed at the end of a heavy frame, which moves round a strong centre shaft in a radius of about 12 feet. The polishing disc revolves at the rate of 180 revolutions per minute. It is driven by a strap, to which motion is given by a driving-pully fixed in the centre shaft. The disc is guided and its pressure regulated by hand. It will polish about 400 square feet of surface in a day of ten hours.

Brick-making with Dry Clay.—A machine for making bricks from dry clay, is now in operation in Staten Island, about nine miles from New York. The works are carried on under extensive sheds, near to the water-side, and are connected with a wharf by a railway, which also extends to the bed from which the clay is dug. A large moveable shed is erected on the bed of clay at the terminus of the railway. In dry weather the clay is collected by slicing it from the surface with a kind of shovel, having a sharp edge, which is drawn by two horses, and will hold about two barrowfuls. In wet weather the surface of the clay is harrowed to the depth of 2 or 3 inches, by a triangular wooden frame, carrying nine teeth, a process which, in the powerful rays of an American sun, soon causes the moisture to evaporate. It is then taken off by the scoop, or shovel, above described, and conveyed to the shed, where it is carried by rail to the machine-shed. It is deposited close to a cylindrical screen, revolving on a fixed axis, which has projecting loose bars. The screen is about 8 feet long and 3 feet in diameter, and consists of bars 5-8ths of an inch square, riveted on two cast-iron wheels, which form the ends: the bars are about 1-16th of an inch apart, and the clay is riddled through them. The screen is inclined, and the clay is fed in between the arms of the shed, and, as it revolves, the small pulverized particles fall through the bars, while the large stones pass out at the lowest end. The clay is next raised by elevations, which are fixed to an endless leather belt, about a foot wide, to the height of about 12 feet, and conveyed to rollers. It is ground and shovelled into hoppers, which feed the moulds. These are 8 inches long, 4 inches wide, and 4 inches deep. The clay is dropped into the moulds, which are placed six in a row to the depth of 3 to 3¼ inches, according to the quantity of moisture it contains, and is afterwards compressed to the thickness of 2 inches in the following way:—Six presses, or rams, fixed in a heavy frame, are raised by a cam, and being allowed to fall, exert very great pressure by their impost on the clay. The blow is repeated, and then the bricks are powerfully compressed, above and below, by revolving cams. Thirty-six bricks are made per minute. They are at once conveyed to the kiln, which is under the shed, at a short distance from the machine. After being burnt, they are separated into three shades of colour, of light and deeper reds. The best burnt bricks are equal in quality to the best English stocks, and were selling at twelve dollars per 1,000.

In a brickyard at Washington, Sawyer's machine, which had been in use for sixteen years, makes about 1,800 bricks per hour, from dry clay, by compression only. The clay is obtained from a pit close by. As it is dug out, it is carted up an inclined plane to the floor over the room where the machine is at work. A roller, weighing 1,600 lbs. and making sixty revolutions per minute, grinds it upon a grating, through which the pulverised particles fall into the room below. There it is shovelled into a hopper which supplies the brick moulds by feed pipes. Three bricks are made at one time, being compressed by top and bottom pistons or pressers, which are connected together by long iron rods, and from the top part are suspended levers, with toggle joints, worked by cranks. The bricks were sold at the rate of 6½ dollars per 1,000, and were of a medium quality between English seconds and stock bricks.

At Pittsburg, 250 men are employed in manufacturing bar iron, rods, sheets, and nails. The iron is manufactured both with anthracite coal and charcoal. They have fifty-one machines for making cut nails: many of them are self-acting in the feeding for the smaller sizes; the strip of iron is inserted in a tube, which is made to revolve alternately half round each way. They make 2,000 kegs of such nails per week, each weighing 100 lbs. and containing sizes from fourpenny up to ten-penny nails. A rivet-making machine was at work, which made rivets weighing seven to the pound, at the rate of eighty per minute. Its main shaft carried two cams, one a side cam, which gave the motion for cutting off and holding the iron between the dies; the other a direct cam for forming the head of the rivet. The cams for the nail-machines are made of drilled cast-iron, and that part of the lever which acts against the cam, is faced with a plate of bell-metal. Several large grinding stones were used, having mouldings on their peripheries for restoring the dies when broken. It is usual in England to soften the dies by annealing previous to restoring their shape, and again hardening them subsequently. The shape may be thus more perfectly restored, but at a greater cost, and the operation of softening and rehardening deteriorates the quality of the steel.

THE OXFORD MUSEUM DESIGNS.

The Vice-Chancellor has announced that the six undermentioned designs have been selected to be submitted to professional judges, according to the statement of requirements of the museum delegates furnished to competing architects:—

No. 5—Cypher, Cross Compasses.
No. 6—Cypher, A. Z.
No. 11—Fiat Justitia ruat Cœlum, design A.
No. 22—Nisi Dominus ædificaverit domum.
No. 26—Spes.
No. 29—Virtus in arduis.

The remaining designs have been rejected.

Like your correspondent, J. F. I have had the pleasure of an examination of the designs for the above building. Though I do not agree with him in his opinions about competitions in general, nor this in particular, I will not enter into a discussion of the points upon which I differ from him, but will refer to a matter which he does not notice. In the discussions about competitions and the criticisms of the decisions of committees, we have heard a great deal about morality and honour, and particularly of the want of it on the part of *committees*. I have read letters in your valuable journal which would lead me to conclude that their authors—generally unsuccessful competitors for some building—were men of the most unimpeachable honour and unquestionable morality, and I do not doubt the *general* truth of my impression.

If, however, I may draw general conclusions from this particular competition, I much fear that architects are not always true to themselves,—that their morals are as weak as those of committees are said to be, and that in their anxiety and avidity for success, they sacrifice their principles of honour sometimes.

One of the conditions of the museum competition was, that no coloured drawings should be sent, but that they were to be got up in indian-ink or sepia. What did I find on my visit, but amongst the rest two designs got up in all the splendour and with all the charms of colour. This was, of course, an attempt to hoodwink the judgment of the delegacy—to charm them by means which they, probably, would not distinguish from the internal or special merit of the *design* considered by itself.

This, Mr. Editor, is a phase of the competition which, I think, you will consider worth notice, for it is ridiculous for architects to expect honourable treatment at the hands of committees if they stoop to trickery themselves. The gentlemen in question have clearly been guilty of a breach of honour to their professional brethren.—Subscriber.

ROYAL INSTITUTE OF ARCHITECTS IN IRELAND.

The first meeting for the session took place on Saturday evening, the 18th inst. Mr. G. Papworth, V.P. in the chair. Mr. J. Owen, Hon. Sec. having read the report of the council, which stated that the Institute was in an improving condition, its adoption was moved by Mr. J. J. Lyons, seconded by Mr. Symes, and carried unanimously. An election subsequently took place for officers for the ensuing session, and the result of the ballot was as follows:—President—Marquis of Clanricarde. Vice-Presidents—Messrs. Jacob Owen, G. Papworth, and P. Byrne. Council—Messrs. Wilkinson, Clarendon, Welland, Lanyon, Symes, Sir J. Benson and Sir Thos. Deane. Hon. Secretaries—Messrs. P. Neville and Jas. Owen. Auditors—Messrs. Montgomery and McCurdy. The chairman addressed the meeting respecting the desirability of gentlemen in the profession coming forward more energetically with their literary contributions, whether by the reading of papers or otherwise, and stated that, in order to set the example, he would endeavour against the next night of meeting to be prepared with an essay himself.

LODGING-HOUSES FOR CLERKS AND MEN OF SMALL INCOMES.

The interest which you take in the welfare of the public, as regards their health and comfort of habitation, induces me to call your attention to the above subject. Model lodging-houses for the industrious and working classes are now daily rising around us; but there is one class, and that a very numerous one, to whom these places are not either fit or convenient in consequence of the very mixed classes which are generally found to be associated therein. The class to which I refer is that of the great number of clerks, who, receiving not very large salaries, would gladly avail themselves of the opportunity, if afforded, by the establishment of such houses, where the accommodation would combine economy with comfort in the arrangements.

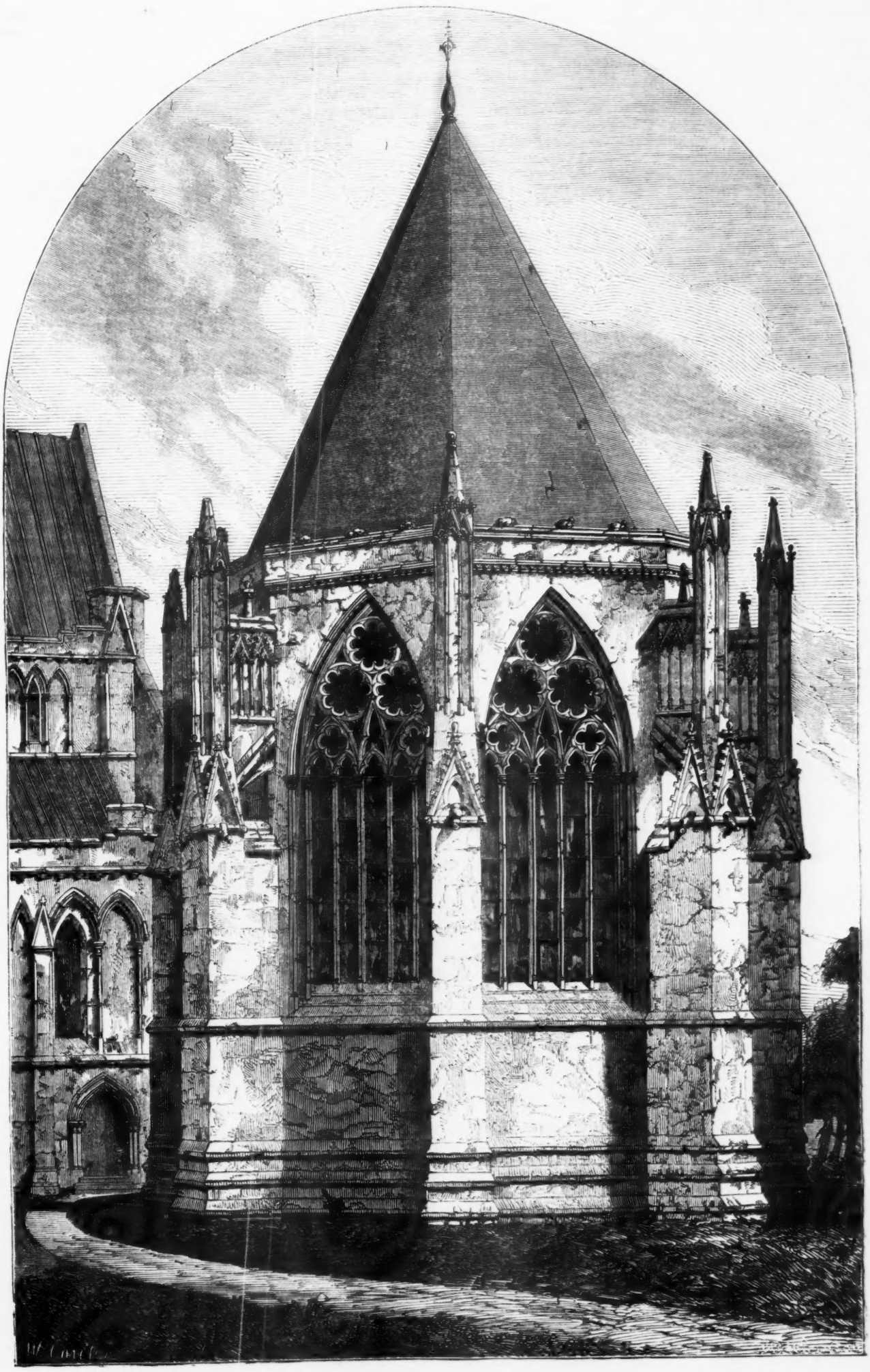
I beg leave to suggest, for the consideration of capitalists, the erection or conversion of some suitable building, in some central locality, near the Strand or Fleet-street, in which that numerous body of clerks, and also other respectable persons with small incomes, might have the benefit of similar institutions without the drawbacks of those now existing.

An investment of this kind would, I am well convinced, not only be a safe one, but, as the progress of those already established shows, a very remunerative one.

One who has often been "taken in and done for."

CHAPTER-HOUSE, YORK-MINSTER.

Among the most beautiful specimens of ancient architecture remaining to us, are the chapter-rooms attached to our cathedrals. From time to time, as occasion served, we have given illustrations of those which have come under our notice. We now add to the list an engraving of the exterior of the Chapter-room at York-minster, a building that has peculiarities about it deserving of special notice. An octagon in plan, and without a centre shaft (as at Lincoln, Wells, and Salisbury), it has a groined roof of timber, which, for boldness of conception, may fairly vie with those above named. It has another peculiarity—it is so well cared for as to make it a model for imitation. Some of the fine specimens we have named are little better than lumber-rooms; while others are in so bad a state as to create anxiety for their safety; but here it is not so; internally, the whole of the work has been carefully restored, and it is in other respects so well preserved, that time seems to have had but little effect beyond that of adding to its beauty.



CHAPTER-HOUSE, YORK-MINSTER.

PROVINCIAL NEWS.

New Swindon.—The Market is now completed and opened. It is built entirely of Bath stone, with a raised parapetted terrace surrounding it, in Swindon stone and Bath dressings. The place is octagonal, and the shops being back to back, in two rows, one faces towards the terrace, and the other towards a well lighted and roofed space for the accommodation of those tradesmen who require shelter for their wares. In the centre is a Bath-stone fountain, and above that, pendant from the roof, a simple but large three-tier corona, which is sufficient to light the shops as well as the enclosed space. The Mechanics' Institution and Hall is approaching completion, and expected to be opened on New Year's-day, with a ball. The hall will accommodate about 1,000 persons for such a purpose, and of course considerably more for the lectures and theatrical representations, for which there is an excellent stage provided. The architect is Mr. Edward Roberts. It will be remembered that we published the design some time since.

Dunmow.—The Town-hall here has been nearly rebuilt, and was opened by a *conversazione* of the members and friends of the Dunmow Literary Institution, on Wednesday evening before last, followed by a ball. The side and front walls of the upper room have been taken down and rebuilt, and a gallery, capable of accommodating nearly 100 persons, has been erected on the north side. The large room, instead of 8 feet, is now upwards of 16 feet high, besides the space in the open roof, and the small side room and lobby, having folding doors opening into the hall, now form, as meetings may require, a larger area. The windows, in casements, with hexagonal quarries, have been enlarged. All the new work has been timber framed, and grained as oak. The works, exclusive of the clock, will cost upwards of 350*l.* The whole has been executed by Messrs. Cock and Franklin, of Dunmow, builders, under the superintendence of Mr. Fenton, of Chelmsford, architect, and a committee of subscribers. A new ornament in the hall is a carved ornamental chair, presented by the ladies of Dunmow to Viscountess Maynard.

Ryde.—Messrs. Bennett and Holdsworth, of London, are the successful competitors for the performance of all the works in their line required for the Ryde water supply. The engines and pumps will be made by Easton and Amos, the hydraulic engineers.

Weston-super-Mare.—Staffs of engineers, surveyors, &c. have been of late engaged in measuring and preparing plans for the proposed pier, docks, railways, &c. in connection with the scheme for uniting the South Coast and Southampton, preparatory to applying for the necessary Acts of Parliament (notice for doing which has been given), for carrying out the works.

Cardiff.—Drainage operations are now briskly carried on in this town, trenches of considerable depth being cut through various streets.

Aberdare.—The Local Board of Health having received a very large number of applications for the office of surveyor, they determined to invite seven of the candidates to present themselves. Each having had a personal interview, the election was proceeded with. On the first division, the votes were given as follows:—For Mr. William Griffiths, of Britonferry, 5 votes; Mr. William Williams, of Bridgend, 3; Mr. W. S. Rampling, of Liverpool, 4. The name of the gentleman who had received the lowest number was then struck out, and a second division was taken, when the following was the result:—For Mr. Griffiths, 6 votes; for Mr. Rampling, 6. The number being even, the chairman gave the casting vote in favour of Mr. Rampling.

Ulverston.—The site at present decided upon for the erection of a covered market-house is Briggs'-yard, with adjoining garden. The main entrance will be in the market-place. The committee estimate that the building, when complete, will cost 5,000*l.* They have issued a prospectus, and plans and specifications are in preparation.

Glasgow.—The foundation-stone of the new premises now in the course of erection in Gordon-street, for the Commercial Bank of Scotland, was laid on 24th ult. Mr. David Rhind, F.R.S.E. is the architect, and Messrs. David Rae (mason), John Shennan (wright), Thomas Leadbetter and Co. (plumbers), William Baird (plasterer), and Field and Allan (slaters), are the contractors.

CHURCH BUILDING NEWS.

Broughton Sulney (Nottinghamshire).—A parsonage-house is now in the course of erection here, also a new chancel to the ancient church. The church is to be renovated. The expense is estimated at about 3,200*l.* The style of architecture is Early English; the rectory to correspond. Mr. Teulon is the architect, and Mr. H. Quarterman, of Oxford, the builder.

Newhaven.—The ancient church of Newhaven, in Sussex, has recently undergone a process of restoration, and has been re-opened.

Cheltenham.—A new church in Cheltenham, dedicated to St. Luke, was consecrated on Tuesday in week before last. The church is Decorated in style, from a design by Mr. F. W. Ordish, of London; and consists of nave, transepts, and chancel. At the east end there is a tower, surmounted by a broached spire, and about 140 feet in height. The broaches are curved, and are thought to give the spire an unsightly appearance. There are sittings to accommodate 1,000 persons. The seats are low and of stained deal, but, except the free seats, with doors. The tower-arch and transepts, it seems, are blocked up with galleries. The chancel is filled with moveable benches. The lighting was done by Messrs. Skidmore, of Coventry.

Nantwich.—The parish church here is to be restored. The intended restoration, it is estimated, will cost 8,000*l.* about one-third of which only has been raised as yet.

Hereford.—Notice has been given by the cathedral authorities that application is to be made to Parliament in the ensuing session, for an Act to enable the dean and chapter to raise money on mortgage, for the purpose of restoring and repairing the cathedral, and discharging certain existing debts.

Sutton-in-Ashfield.—At a meeting of the parishioners of Sutton-in-Ashfield, Notts, on 8th inst. a rate was unanimously granted to the churchwardens for the repairs of the parish church.

Bolton-upon-Dearne.—The reopening of the parish church of this village took place on the 2nd inst. The church has been repewed, a considerable portion of the roof rebuilt, together with a large part of the north and east wall, a new vestry leading out of the north chancel added, and the churchyard wall considerably raised.

Birkenhead.—Mr. M'Bride, of Liverpool, has completed a bas-relief, which, with architectural decorations, will be fixed as a memorial to a late local celebrity, Mr. W. Stevenson, surgeon, in St. Mary's Church, Birkenhead. The subject of the bas-relief was suggested by the text, "Sick and ye visited me." It represents the deceased watching over and tending a beautiful maiden, whose relatives are represented as earnest and anxious spectators. The relief is canopied and surrounded by work of a Gothic character, in Caen stone, to harmonise with the character of the church. The inscription tablet is fixed below the relief.

Alne.—The church of St. Stephen, built and endowed at the sole expense of Lady Frankland Russell, and situated on her estate in the parish of Alne, was consecrated by the Archbishop of York on Tuesday fortnight. The building consists of a nave, chancel, north and south transepts, with semi-octangular ends, and four recesses, which can scarcely be designated aisles, at the junction of nave, chancel, and transepts. The chancel is raised one step above the nave, and the altar two steps above the chancel. Open stalls are arranged for the congregation. The roof is of open oak timber. The external walls are of pebble rubble and bricks, the latter laid in diagonal or herring-bone courses, alternating with the rubble. The mouldings, &c. are of magnesian limestone.

Wykeham.—On Wednesday in week before last, the Archbishop of York also consecrated the new church at Wykeham, near Scarborough, built and endowed at the sole expense of Lord Viscount Downe. The edifice has been erected on a new site, fronting the Malton and Scarborough-road. About three weeks previously, the archbishop consecrated two other new churches, as already noted, at Cowick and Hensall, both in the parish of Snaith, built and endowed at the sole expense of the same nobleman. To each of these three churches Lord Downe has attached a new house for the residence of the incumbent, together with a school and teacher's house.

COMPENSATION CASE, EAST GRINSTEAD LINE.

IN the case of J. H. Wilson, esq. of Worth, near Crawley, Sussex, from whom the East Grinstead Railway Company took 4a. 2r. 36p. of land (freehold, or equal to it), a reference was determined on, under the "Lands' Clauses Act," and Mr. Powell was named arbitrator by the Board of Trade. There were peculiar circumstances in the case. The line cuts off sixty acres from the main estate, takes away the approach to the residence, and might have been formed, it was asserted, more cheaply in a position to have avoided this. Mr. Wilson had offered a sum of money to induce the directors to move it. There are a church, school, &c. as a nucleus for building operations, and the land contained stone and brick-earth, which had been used by the company. The claim made for land and compensation was 5,000*l.* which included some timber and a cottage. Messrs. Bowers and Son were the solicitors for the claimant. Mr. Montague Chambers and a junior appeared on that side; and Mr. Edwin James and a junior for the Company. Mr. Job Bintley, Mr. G. Morgan, Mr. Godwin, and several others supported the claim. Mr. Jones, Mr. Pownall, Mr. Hood, &c. gave evidence on the part of the Company; and the referee has awarded the sum of 1,400*l.*!

It was shown in evidence that the stone and brick-earth actually used by the Company must have saved them more than the amount of the claim. Mr. Wilson has no cause to be grateful to the East Grinstead Railway Company.

THE TOLL-BRIDGES OF THE METROPOLIS.

AN interesting Parliamentary Blue Book, recently issued, furnishes some instructive data as to the traffic over the River Thames, per toll-bridges.

From the evidence taken before the Committee on the Metropolitan Bridges, it appears that Southwark-bridge, with approaches, cost 666,000*l.* Its present annual income is 2,900*l.*; its expenditure, 1,200*l.* Before the opening of New London-bridge in 1831, the income of Southwark-bridge was 7,000*l.* but in 1832 it sank to 4,544*l.* and in 1834 to 3,983*l.*

Waterloo-bridge cost, including approaches, 937,391*l.* 11s. 4d.: of this, 476,000*l.* was raised by 4,763 100*l.* shares, 300,000*l.* by 5,000*l.* annuities of 60*l.* each, 200,000*l.* by 5,000 annuities of 40*l.* each: a further sum of 54,000*l.* was raised by bonds, which makes the whole sum contributed 1,030,852*l.* The receipts for this bridge for the year ending February last were 19,197*l.* 0s. 11d. This cheerful revenue is mainly attributable to the erection of the South-Western Railway Terminus at the foot of the Surrey side of the bridge, whilst Vauxhall-bridge, on the other hand, has suffered a great diminution in their receipts from the cause of Waterloo's prosperity. About three per cent. interest is paid on the annuities of both classes of Waterloos, which are now about worth 29*l.* 10s. and 25*l.* respectively. The original shares fetch 5*l.* 5s. to 5*l.* 10s. The arrears due to annuitants amount to 2,399,937*l.* 10s. (*sic.*)

About 113,000*l.* have been spent upon the Hungerford Suspension-bridge, and it is estimated that the proposed alterations to this bridge will cost 150,000*l.* more, making the whole cost of the bridge 269,000*l.* More than 3,000,000 passengers pass over this bridge annually, and about 2,500,000 pass to and fro from the steam-boat pier at the north side of the bridge. By the projected alterations, it is estimated that the revenue of this bridge would amount to 30,000*l.* annually.

Vauxhall-bridge and its approaches cost 300,000*l.* exclusive of 70,000*l.* for its lawyer's bill. The receipts for the last year were 11,000*l.* but the average annual receipts before the removal of the South-Western Terminus were 12,700*l.* The expense of keeping this bridge in repair is about 2,300*l.* a year, and the dividend paid last year was 26s. a share. The capital of the company consisted of 5,800 shares, of the nominal value of 64*l.* but their market price is but 23*l.* each.

It will be seen from these statistics, that our London bridges, with the exception of Hungerford, have proved a not much better investment to moneyed men than the Thames-tunnel has to its fortunate shareholders.

En passant, the disfigurement of London-bridge by black broad arrows and numbers has been rubbed off, since the notice of the reprehensible practice appeared in the *Builder*.

PROBLEM IN CARPENTRY.

Allow me to suggest (though, perhaps, coming rather late) what appears to me a more practical mode of solving the problem referred to in the *Builder*, p. 537.

In the diagram describe the right-angled triangle ABC, having for its base the side of the purlin AB, and for its altitude the rise of it from D to A: the hypothenuse BC is the length of the required line.

This simple rule is of very general application. J. R. C.

The problem in practical carpentry that appeared in a recent number of the *Builder* is of the greatest importance in the practical demonstrative department. The facility of cutting the down bevel, upon your worthy correspondent "F. P.'s" principle, as yet surpasses all that I have hitherto seen, and I shall feel obliged if your correspondent will give an arithmetical rule to calculate the length of line that will coincide at octangular intersections. J. B. G.

THE FATHERLESS TENDER.

AUDI ALTERAM PARTEM.

I should regret at any time to see your columns occupied with trifling matter. Your space is too valuable to admit of anything thin, innutritive, or unrefreshing. I therefore feel it to be my duty to apologise for submitting the following particulars: at the same time I cannot avoid doing so, as I hope will appear:—

In the *Builder* of November 11th, amongst the notices of tenders, was published a list of tenders "received by the National Freehold Land Society for two villas at Enfield." This was done without the sanction or knowledge of the directors or officers of the Society: had it emanated from here by authority, it would have done so directly from myself. The two last tenders stated in the list, are those of "Clever and Co. (accepted), 930*l.*; B. and C. Hayne (withdrawn), 925*l.*"

In the course of the week after publication, a letter was received by the Board of Directors, through the secretary, from Messrs. Hayne, saying, in reference to that notice, and these villas,—"We did not tender for the same, or authorize any one so to do, much less to withdraw in favour of another builder. As this statement is calculated to reflect upon our character as contractors, we flatter ourselves we are not asking too much of you to furnish us with the name of the party who so unwarrantably made use of ours." The secretary replied to Messrs. Hayne, that no one was authorised to make such communication to the *Builder*; and that their statement, that they did not tender for the erection of the two villas, he had forwarded to the surveyor. In the *Builder* of November 18th, after the notices of tenders, is a note in compliance with a desire which had been expressed by Messrs. Hayne, that it should be stated that "they did not tender for these villas, or authorize any one to do so for them, although their names appeared in the list of tenders."

It is interesting to have mysteries cleared up; and I should like that this were. That there is one, seems certain; but I fear I can only be a contributor towards its revelation. I have before me,—1stly, a tender, received at the same time with others, bearing date, Sept. 4th, and purporting to come from Messrs. Hayne's place of business, saying, "Sir,—We will undertake to erect the double villa at Enfield for the sum of 925*l.*—Yours, &c. Ben. and C. Hayne." 2ndly. Draft of letter addressed by me on Sept. 7th, to Messrs. Hayne, and delivered at their office, informing these gentlemen that the tenders referred to had that day been opened; and further saying to them, "The merits of your tender, the committee were prevented entering into, in consequence of the absence of a list of prices for the regulation of additions, deductions, and instalments, and a statement of the time within which you would undertake to complete the houses from the date of signing the contract,—both which particulars were required by the specification. I shall feel obliged if you will furnish me with these," &c. 3rdly. The reply of Messrs. Hayne, acknowledging receipt of the preceding, and saying, "In reply, beg to state, that unexpected business engagements will prevent our erecting the double villa at Enfield, according to our tender, and render it unnecessary that we should forward you a schedule of prices."

The first part of the mystery is, how a copy (erroneous in some points, but none of them affecting the present question) of my private abstract of the tenders, which is the only one here, obtained, without my knowledge, a place in the *Builder;* but the other portions leave that quite in the shade. I allude to the correspondence of handwriting which appears in the signatures to the tender and withdrawal, as well as in the other parts thereof, the repetition of the expression "double villa," the reference, in the withdrawal, to "our tender" (which suggest that the former document emanated from the same source as the latter), and the disavowal to the society's directors, and to the *Builder*, by Messrs. Hayne, of having tendered or having withdrawn. Somebody has been imposed upon. If builders are liable to have liberties of this kind taken with them, whatever may be the object, they should unmask the system if possible; and it is of consequence that architects should be aware how they, too, are liable to have spurious tenders foisted upon them.

I regret occupying so much space with such a subject; but finding myself in a measure arraigned, I could not avoid presenting my defence.

James Wylson, Surveyor, N.F.L.S.

ON THE MEANS OF AVOIDING SMOKE.

INSTITUTION OF CIVIL ENGINEERS.

In the paper read on the 14th inst. "On the means of avoiding Smoke, from Boiler Furnaces," by Mr. W. Woodcock, the author commenced by explaining the nature of smoke as existing in furnaces, the cause of its formation, its component gases, and the temperature at which they became inflammable, and then pointed out a method of preventing the evolution of opaque smoke, by simple and apparently effective means. It was stated, that ordinary pit coal, under the process of destructive distillation, gave off various volatile substances, some of which were gases, such as "Hydrogen,"—"Marsh gas,"—"Olefiant gas,"—"Carbonic Oxide," &c.: these and others existed, in the furnace, only in a gaseous state, becoming liquid or solid when in the external air, and of such coal tar was composed; and amidst them the carbon, in minute sub-division, was held in suspension, giving to the smoke its sable hue. All these gases were combustible at given temperatures, provided a certain amount of oxygen was present. It was then shown, that the air containing this oxygen, if imparted to the gases, after leaving the fuel on the bars, must be administered so as not to reduce the temperature of the gases below their "flame-points."

The formation of smoke, or visible carbon held in suspension, was stated to depend entirely upon the insufficiency of the supply of oxygen in the furnace, as the heat of the furnace would cause the various gases to be given off more rapidly than their combustion could be supported, by the quantity of oxygen passing through the fire-bars in the same period of time; this evil being much aggravated by the heat of the air as usually supplied from the ordinary ash-pit, generally ranging from 200 degrees to 300 degrees Fahrenheit, and the air, at that heat, containing less oxygen by about one-third than at the usual atmospheric temperature, and consequently that the combustion of the fuel to which it was supplied, must be one-third less perfect.

The simplest means of preventing the formation of smoke, were shown to be by providing for an ample supply of oxygen in a condensed state, in the form of cold air, to the fuel on the fire-bars, and by administering such further supply of oxygen to the heated gases, as might be necessary for their complete combustion, whilst in contact with the boiler; this latter supply being given at such a temperature as would insure the successive ignition of the gases as they were evolved. Thus by establishing nearly perfect primary combustion, the quantity of smoke evolved was shown to be reduced to a minimum, of which no visible trace ever reached the summit of the chimney.

The apparatus by which this desirable end was attained was described to consist of two parts, each being the addition of a very simple apparatus to the ordinary boiler-furnace. The first of these was a double set of thin iron bars, lying horizontally in the direction of their length, parallel to each other, immediately beneath the grate in the ash-pit. Each set of bars resembled a Venetian blind in its arrangement; the bars being inclined at an angle of 45 degrees to the horizon in the direction of their width. The bars of the two sets were thus inclined in opposite directions, and being so close together that a vertical straight line could not pass between any adjacent pair of them; yet far enough apart to allow all cinders to fall freely through, and the air to pass freely upwards to the fire. The bars were of the same length as the grate, so to extend from front to back. It would be perceived, that the effect of this arrangement must be to screen the ash-pit completely from the heat radiated directly downwards from the grate, and so that scarcely any would pass through by reflection. In fact, not a ray of heat could reach the ash-pit from the furnace, without suffering four reflections from rough iron surfaces, which would leave a mere shadow of a ray for further progress.

Thus a large quantity of heat, which otherwise would be radiated out of the furnace into the ash-pit, thence reflected, and so lost, was saved for the boiler. The ash-pit, also, was only slightly heated by the cinders which fell through; and this source of heat might be reduced to any extent by frequently removing the rubbish from the pit. Another consequence was, that the air passing from below through the grate, not being heated in the ash-pit, entered the fire cold, and therefore not, as it did from ordinary ash-pits, in a rarefied condition. By its coolness, this air prevented, to some extent, the burning of the grate-bars; and, by its unrarefied state, it produced a more intense and rapid combustion of the fuel, after it had passed the bars.

Another part of the contrivance was more especially the smoke-burning apparatus. It consisted of a set of tubes, open at both ends, passing through the furnace horizontally from front to back, and terminating within the wall of the front of the bridge, with valves to regulate the access of air into the tubes. The fire-bridge differed importantly from that of an ordinary furnace. It was hollow, and was divided into two parts, the larger of which stood up from below: the other, which was shallower, was in contact with the boiler. Between them all the products of combustion passed from the furnace. The two parts communicated with each other by channels at the sides, and thus formed together an annular chamber. The tubes before mentioned entered the front wall of this chamber, and thus established a communication between its interior and the outer air. The back wall, or plate, both of the upper and of the lower part of this chamber, or bridge, being perforated with numerous holes, opening from the interior of the bridge to the space beyond it, established a direct communication between the outer air and the throat of the flue. There was a second solid bridge beyond the first, descending from the upper side of the flue: this, by interrupting the direct channel through that part of the passage, retarded the flow of the smoke and gases, and caused their perfect mixture with each other, within the space between the bridges.

The result of this arrangement was, that a current of highly-heated air, which passed through the tubes in the furnace, escaped at the bridge, through the perforations in the back wall, and mixing with the gases from the furnace, which held the smoke in suspension, converted the smoke into flame.

It was stated that this apparatus had been very satisfactory at Messrs. Meux's brewery: there was not the slightest appearance of opaque smoke from the chimney, and the money saving, resulting not only from the more perfect combustion of the fuel, but from the use of an inferior quality of coal at a lower price, amounted to full 20 per cent.

Notices of Books.

Notes on the Nimbus. By Gilbert French. Printed for presentation. Bolton: 1854.

The object of this pamphlet is not so much to give an account of the nimbus, and the variety of shapes it has assumed, already done by M. Didron, as to combat an explanation set forth in that archæologist's work, and generally received as correct. The nimbus, when it belongs to one of the persons of the Holy Trinity, is divided by two lines drawn from the outer edges, intersecting each other at right angles in the centre, and forming four rays, one of which is concealed by the head. M. Didron views this as the form of the cross; and the writer of the paper before us, Mr. French, says,—

"It would thus appear that the cross, the well-known emblem of Christianity, was adopted by ancient religious artists to indicate the representations of the Deity, and this idea is un-

doubtedly accepted at the present time by the all but universal use of the term "cruciform nimbus" whenever it is referred to. It is one object of this brief paper to suggest that an entirely different meaning was intended by the ancient artist in painting the divine nimbus, and that the modern name is objectionable, as conveying an erroneous idea."

Mr. French points out that this "cruciform nimbus" was used by the eastern Pagans, and is connected with the idea of fire or light. He sees its origin in the fact, that if we "look at the sun, the moon, or any brilliant artificial light under the same circumstances as those with which the ancient Pagan or Jew approached his Deity,—that is, with the eyes covered with a veil, or half-closed,—it immediately presents the appearance of emitting clustered rays of light at right angles, corresponding with those passing from the Hindoo goddess Maya, and from the numberless representations of the Deity produced by Christian mediæval artists."

The writer is of opinion, "that with occasional, but very rare exceptions, the mediæval Christian artist, when painting the nimbus of the Deity, did not intend to represent, or at all refer to the cross; but that his purpose was to demonstrate, by three rays of light proceeding from the divine head, that the one person represented was invested with the power, and the glory, as well as the identity, of the other persons forming the Holy Trinity."

Mr. French gives a number of curious illustrations, and adds a chapter on "Rayed Banners," as bearing on the subject.

The Micrographic Dictionary. By J. W. Griffith, F.L.S. and A. Henfrey, F.R.S. J. Van Voorst, Paternoster-row. 1854.

The microscopic world is a strange and wonderful one. Modern science and research have immensely expanded its explored and known territories; but every day is opening up something new and extraordinary in it. Like the world at large, it comprises three great natural kingdoms, the animal, the vegetable, and the mineral, and through each and all of these the microscope has been ranging, and is ever adding to the wonders of this actual land of Lilliput. In the mineral or crystallographic branch of micrography, we have been often struck with the singular analogies of certain microscopic forms to those strewn over the astronomical firmament which modern telescopic appliances have revealed. And even in the minuter vegetable forms evolved by the microscope, how singular it is to find as a prevailing elementary form, those spirals whose telescopic discovery in the starry firmament has created so much astonishment amongst men of science. It is as if the infinitely great were but a reflex of the infinitely minute,—as if the telescope were but an astronomical microscope with which we Lilliputian in-dwellers within the precincts of a starry atom, were contemplating the interior and elementary shapes of some Brobdignag of crystalline or vegetable origin.

The microscope is making most useful and interesting discoveries in the animalcular branch of micrographic science, and especially in regard to blights, infusoria, &c. as they affect not only the vegetable creation, but the air we breathe, and the water we drink. In the very interesting dictionary under notice, which is well illustrated with multitudes of such forms, we find a passage, in reference to epidemic diseases, which it may be worth while to quote under present or (happily as we may now say) passing circumstances and as a specimen of the work itself:—

"The air has frequently been examined in regard to the presence of animal or vegetable organisms which might account for the production of epidemic and infectious diseases. In none of these cases have any bodies ever been found which could in any way be interpreted as the origin of the diseases: nothing more has been met with than common infusoria and such other bodies as may at all times be found in air, from whatever source. As these experiments cannot, however, be too frequently repeated, it may be well to point out the method of making them. The best plan is to connect a glass tube, twice bent at right angles, with an aspirator: the free end of the tube should be drawn to a fine point; and just above this, the tube should be blown into a bulb. The point is then immersed in a small quantity of pure water, and the water allowed to run very slowly from the aspirator. The water is then slowly drawn into the tube, and the air is washed as it passes by the water in the bulb. When a large quantity of air has been washed by the water, the latter is shaken briskly and allowed to run into a clean glass for examination.

Another method consists in closing, by fusion, the end of a glass funnel, filling this with ice, and collecting the drops of water condensed from the air in a receptacle placed beneath."

Dr. Griffith and Mr. Henfrey are doing good service to science, by the publication of the work under notice.

A Dictionary, Geographical, Statistical, and Historical, of the various Countries, Places, and Principal Natural Objects in the World. Illustrated with Maps. By J. R. M'Culloch, esq. Member of the Institute of France. A new edition, revised, with a supplement. In two volumes. London: Longman, Brown, Green, and Longmans. 1854.

This admirable work forms a treasure of national and even international importance,—not so much from the nature of its contents as from the manner in which they have been treated, and from the celebrity of the author. Geographical Dictionaries are not rare, but the circumstance of an author such as M'Culloch having brought his talents to bear upon a subject usually handed over to mere obscure and anonymous compilers, casts one and all of these and their productions into the shade, and most justly so, considering that this is a work on which not only the name, but the abilities of its well-known author have been most successfully and profitably expended.

The first edition of M'Culloch's "Geographical Dictionary" was issued in 1841. Extraordinary changes having taken place in this and most other countries since that time, partly of a political nature, and partly from the unusually rapid progress of population, wealth, and civilization, an immense deal of labour and no little cost were again expended on the work, and exceedingly numerous alterations and amendments made on it, the greater number of the principal articles having been either wholly or partially re-written; and the new work, as we may almost call it, was first issued in 1851. Even since that recent date, however, the book has been further materially improved, and the articles on Russia, Turkey, and Australia, with others of less importance, have been mostly re-written. It is now, therefore, in every respect a mature and most valuable work. The type is very clear, and so close and compact, that each of the two volumes contains at least three or four times the quantity of matter contained in many large quarto volumes of similar character, although the size is only that of imperial octavo. There are no less than about ten hundred pages of small type in each volume, however, which seems to account for so immense a mass of miscellaneous information, in reference to every country, province, county, city, and town, throughout the whole world, being embodied within the limits of two volumes octavo.

Village Development; based on Practical Principles; or, the Old Vicar's Advice. Cox, Covent Garden. 1854.

This little volume seems to be written in a right spirit, and contains a good deal of advice, useful to incumbents of parishes and others, who have it in their power to improve the manners and habits, and cultivate the intellect and morals of village populations.

Bury St. Edmunds' Cemetery Competition.—The committee of the Burial Board of Bury St. Edmunds, in answer to their advertisement, received thirteen designs; and from these, those sent by Messrs. Cooper and Beck, of London, have been selected, and will be carried out forthwith at the usual commission.

Caution to Owners of Houses.—A gentlemanly-looking person called a few days since at a house in Park-place, Regent's-park, for the purpose of looking over the same: it being totally unfurnished, the person in charge did not accompany him. Judge of her surprise on her next perambulation, to find that eleven of the keys (worth about 9d. each) had disappeared with this "diurnal depredator."

J. B. W.

Miscellanea.

Manchester and Salford Sanitary Association: The Health Question.—On Thursday evening before last, Mr. Thomas Turner, surgeon, delivered a lecture, under the auspices of the Manchester and Salford Sanitary Association, at the Town-hall, Chorlton-upon-Medlock, on "The recent alarm of cholera, and the influence of human agency in preventing its visitation and its fatal results." Mr. Turner said that the object of the Manchester and Salford Sanitary Association was not curative, but preventive. Of all policy prevention was the best. The preventible causes of disease formed the bulk of the causes which produced disease, and took away life. There were very few causes of disease which were not preventible. Ignorance was the greatest evil in our sanitary proceedings. Time was when medical science was totally unknown except to medical men; but it was not so now, and he had no hesitation in saying that by human agency the visitation of the cholera might be averted. To be forewarned was to be forearmed. He attributed the recent exemption from cholera in Manchester to the human agency employed by the Manchester and Salford Sanitary Association, and to the efforts of the Corporation. The greatest boon ever conferred upon Manchester was the Waterworks, and he could speak of the purity of the water. Water was an essential part of our blood. In 1,000 parts of blood there were no fewer than 784 parts of water. But we were too much in the habit of polluting this water. Spirituous liquors were a dreadful addition. They fired the blood, injured the heart, lungs, and brain. He had been astounded to find it asserted, on the authority of Mr. Porter, before the Board of Trade, that the people of England, Scotland, and Ireland, taxed themselves for beer, spirits, and tobacco, to the amount of from 57 to 58 millions of money annually; that a working-man earning from 10s. to 15s. a week spent at least one-half that sum on his own person in drink. The lecturer next referred to the great necessity of inhaling pure air. Whenever they went home and smelt any noxious vapour, they ought to root it out. Take care that the cesspools and drains were attended to. By doing this they would make their houses sweet, and a sweet home was a happy one. There was nothing so expensive as disease: it always cost a great deal of money. It was certain that cholera could only be averted as a fatal disease by strict treatment of premonitory symptoms. Preventive measures stood foremost, premonitory treatment stood next; and if these two things were their watchwords, and they carried out the laws of health which were now so generally made known, and all the means used to remove abominations about us, and the sources of disease of our own creation, he believed that we would be exempt from cholera. At the close of the lecture a vote of thanks was given to Mr. Turner, on the motion of Dr. Angus Smith.

Restoration of Limehouse Church.—It will be remembered that, excepting the walls and tower (which were seriously injured), this fine church was destroyed by fire on Good Friday, 1850. Being insured for only 5,000*l.* while the damage amounted to nearly 13,000*l.* a church-rate of one shilling in the pound was made; and with the proceeds and various subscriptions the repairs were so far proceeded with as to enable the edifice to be opened with temporary fittings—offering a painful contrast to its former state. These funds being all exhausted, and there being difficulties in the way of another church-rate, it has been resolved to attempt to obtain the requisite funds by an appeal to the parishioners and others for voluntary subscriptions. A public meeting of the inhabitants was accordingly held on the 8th inst. presided over by Mr. W. Baker, coroner for Middlesex. The meeting was well attended, and the utmost unanimity of sentiment and determination on the part of all to do all they could to accomplish the object appeared to prevail. At the conclusion of the meeting a list of subscriptions from influential firms and individuals in the parish, amounting to upwards of 600*l.* was announced.

Lightning Conductors.—The report in your journal of the discussion upon lightning conductors at the meeting of the British Association, when Professor Faraday pronounced the insulation of the conductor by the use at intervals of glass or other material ineffectual, has suggested to me the idea that a more complete, and perhaps thoroughly effectual, insulation might be effected by coating the rod or rope throughout its length with some non-conducting substance, as for instance gutta-percha, in the same manner as the submarine and subterranean telegraph-wires are treated. Would not this prevent the electric fluid leaping from the conductor to the lead or iron-work connected with the building itself, and allow of the rod or wire-rope being closely attached to the walls, which simplifies so much the operation of fixing?—Fulmen.

Conviction under the New Smoke and Nuisance Act.—Mr. George Thompson, an extensive tanner in the Spa-road, Bermondsey, was convicted last week at Southwark, under the new Smoke and Nuisance Act, by order of Lord Palmerston, and at the instance of the Commissioners of Police, of carrying on the trade and business of a tanner, such causing a noxious and offensive effluvium, so as to annoy the inhabitants in the neighbourhood, without using the best practicable means for preventing or counteracting the annoyance, &c. Mr. Combe fined the defendant 40s. and costs, intimating at same time that he would render himself liable to a penalty of 10*l.* next time, and double that amount every day he continued the nuisance afterwards. He further informed the defendant that this was a mild proceeding on the part of the Government, as he might have been indicted and put to great expense.——In another case, Mr. Richard Trotman, an extensive bone-boiler, at the corner of Green-street, Friar-street, was summoned, under the same Act, for carrying on an offensive trade, so as to be a nuisance, and injurious to the healths of the inhabitants, &c. In this case, Mr. Bodkin consented to an adjournment for a week, Dr. Taylor in the mean time waiting on Mr. Trotman to suggest to him certain means to prevent the nuisance. Shortly after, the first defendant returned, and begged Mr. Combe to suspend his judgment in that case, to give him time to make alterations, as allowed to Mr. Trotman. Mr. Combe said he could not alter his judgment in the absence of the counsel for the Crown; but he would suspend infliction of the penalty for a week, to give Mr. Thompson an opportunity of writing to the Home Office on the subject, and making similar proposals to Mr. Trotman's.

Permanent Way.—A pamphlet has been published by the Permanent Way Company, of Westminster, as a circular, containing an account of the various patents purchased by the company, in order to enable them to carry out their business design of improving and strengthening the permanent ways of our old railways, and laying down the new in accordance with those principles of strength and true economy which have not been observed as they ought to have been in many instances, even apart altogether from the subsequent introduction of heavier engines and greater speed than previously in practice. It is long since the *Builder* predicted a complete revolution in the mode of forming the permanent way, as an inevitable result of modern practice, and pointed out the immensely increased risk the public would otherwise come to experience when the full effect of heavy engines and great speed on permanent ways originally ill adapted to such circumstances was accomplished. Much has since been done to obviate these anticipated consequences, and it is to be hoped that still more will be done, not only on new lines, but on the old, to alter and strengthen the system of permanent way. To this end, the Permanent Way Company cannot but be a most useful agent. In their circular just referred to, they not only describe various important inventions to that end, now in their hands, but accompany their details with numerous diagrams and sketches, showing the forms of joints, rails, sleepers, &c. and the modes of laying them down. They also propose to purchase other approved inventions, and to issue new circulars occasionally as new inventions or improvements on old may present themselves or occur to the able engineers by whom their stock of patents has been originated.

The Liverpool Wellington Testimonial.—The "Wellington Testimonial Fund" Committee at Liverpool met on Monday week, when it was stated that the sum subscribed amounted to 6,000*l.* The sum raised, it was urged, would not suffice for the erection of a column, as originally proposed, and, after considerable discussion, it was resolved to ask the subscribers as to the disposal of the surplus, after payment of expenses.

Temperance Pleasure-grounds.—At the last weekly meeting of the West London Anti-Enclosure and Field Garden Allotment Society, a committee was formed for the purpose of opening pleasure-grounds on temperance principles. Already they have had the offer of a field for such purposes. Part of such grounds they will set apart for field garden purposes.

G.

Air-tight Windows.—How very simple are some of the contrivances for which patents are taken out, as in the case of one mentioned in p. 564, *ante*, for certain modes of applying india-rubber to doors and windows, a practice adopted by me some years ago. I had at the Great Exhibition of 1851 a model window in artificial stone, with a casement to shut against a tube of india-rubber sunk in a groove, and therefore shall feel myself justified in executing any similar work, and to advertise for it, especially as mullioned windows generally require some such contrivance to make them weather-tight, the lack of which has led their adoption to be objectionable.

J. P.

The Iron Trade.—Sheet iron, it appears, has been lately sold as low as 9*l.* There is, nevertheless, a great want of orders amongst the immense multitude of furnaces and ironworks of every description, which have been blown in and erected within the last few years. These have so far increased the powers of production as to render it impossible to obtain an adequate demand under anything like a general depression of the trade, such as now seems to be approaching: and the sooner a large proportion of them are blown out the better for the ironmasters. As yet, however, the furnaces are still blazing, with the exception of some two or three lately noticed. A daily drain upon the labour market by the recruiting sergeants goes on and is likely to continue. The increased demand for marine and general military purposes is regarded as a complete refutation of the opinion entertained by some that the war is doing all the damage to the trade. The Americans are becoming too self-dependent (thanks to our own iron-trade speculators and their overweening desire for high prices) to be likely henceforth to be of much service in sustaining the surplus of furnaces at work: indeed, there is a complaint of continued embarrassment on the score of the American market, although there is an admitted reduction of at least twenty shillings a ton on recent prices.

Bedfordshire Archæological Society.—The general meeting of this society was held at Bedford, on Tuesday in last week, when the High Sheriff took the chair, and opened the meeting The report, congratulating the society on its continued progress was then read and adopted, and office-bearers elected. The Rev. W. Monkhouse read a paper on Risinghoe Castle, which he regarded as no castle at all, far less a Norman or Roman one. Some account of this paper appears in the *Bedford Times*. Several members present agreed with Mr. Monkhouse. Mr. G. Hurst then read a paper "On Churchwardens' Ecclesiology." This paper was professedly compiled from a churchwarden's manuscript, strangely discovered among a quantity of grocer's shop-paper,—

"Saved from packing
Soap and candles, lard and blacking."

Under a show of gravity, the various disfigurements known by the name of churchwardens' repairs, embellishments, and improvements, are ironically recommended. In advancing the claims of compo, it was declared that the inventor ought to have had a statue erected to his memory, cast in Roman cement; and, to avoid the sin of idolatry, the ornaments and figures about a church should be formed of compo, as then no one would think of worshipping them, and they could not be objected to, as being either molten or graven images. In warming churches, a common, vulgar stove, with a pipe carried up through the window tracery, is advised on the score of cheapness, and to be placed especially for the comfort of the squire and principal parishioners, and the minister, provided he be a beneficed clergyman! Various chippings away of stone ornaments, whitewashings, and yellow ochreings, plastering up of sedilia and piscinæ, are with apparent earnestness enforced. As a means of saving, when lead is dear, and the roof is out of condition, it is recommended that the metal should be sold and tile or slate substituted, by which the expense would be defrayed, and, accordingly, praises would be received from the parishioners in vestry assembled. The paper concluded with a vindication of churchwardens' dinners, as one of the glorious institutions of the great Alfred, and therefore a link in the chain of the British Constitution!

The New North Dock Branch Railway at Liverpool.—All the arches on the main line are finished, and the spandrils levelled up to the height of the extrados of the arches. The embankment from the canal up to Sandhills-lane is also completed, and nearly ready for the rails. The goods-yard, between Blackstone-street and Walter-street, is being laid out, and quay walls built, so that 100 railway waggons can be placed around it and simultaneously loaded. Over this a shed is to be erected, covering an area of nearly 8,000 yards. Seventy turntables are in course of construction, and numerous other appliances are arranged. In little more than four months, upwards of 10,000,000 of bricks have been used on the work, and 120,000 cubic feet of ashlar, from various quarries in Yorkshire and Lancashire; to unite which in a solid mass of the required form, 10,000 tons of prepared mortar have been required. The number of men employed to execute the work has averaged about 900. The new line, when completed, will run directly to Stanley-dock, Nelson-dock, Wellington-dock, and Sandon-dock. The works, it is thought, will be ready for use by the end of the present year; at all events, early in 1855.

Portsea Island.—The gas works here have been let on lease to Mr. Penny, engineer, of London. Within the last two years upwards of 30,000*l.* we are told, have been spent by the company in improvements and extensions.

Opening of the new Ragged Schools at Stoke Newington.—The new room, which has been built out of the proceeds of a bazaar held some time since, is a plain structure, but the ventilation is said to be well attended to. Attached to the school is a bath-room for the use of the scholars. On Wednesday in last week about 150 children were treated in the school-room, in honour of the recent opening of the school.

The Chelsea Waterworks Company.—A correspondent says, the Chelsea Waterworks Company have given notice to the Fulham Bridge Company (commonly called Putney-bridge) of their intention to drive their main *under* the Thames 50 yards above the bridge, and the work will be at once proceeded with. The well-known white cottage on the Bishop of London's grounds is already purchased for removal, and this end of the tunnel will terminate at the site of the present Savings' Bank, at the top of the High-street, Fulham, that building, and one or two other houses adjoining, being removed.

Workers in Granite.—I often notice in reading the *Builder*, "wide estimating," which, in common with others in the building branches, astonishes me vastly. I have, in my recent experience, a case I think too good in point to be lost sight of. As undertaker, I recently interred a lady in one of the cemeteries. The husband was desirous to have a granite ledger of Aberdeen grey, and I was instructed to give a price for a block, 6 feet 6 inches, 2 feet 6 inches, and 6 inches, axed only. I applied to two masons, one of whom named eight guineas, the other 14*l.* These being deemed high, the husband made inquiries personally, and gave the order at once to the proprietors of a stone wharf in the neighbourhood of one of the bridges, who completed it and actually delivered it (some two miles away) for the sum of 5*l.* 10s.—A.W.

Sewer-Flushing Apparatus.—Some important, and it appears highly successful experiments with a new and ingenious apparatus, invented by Dr. Gray, of the *Dublin Freeman's Journal*, have been recently made at Dublin, in presence of the High Sheriff, the presidents of the Colleges of Physicians and Surgeons there, Professor Sullivan, of the Museum of Irish Industry, Mr. W. D. Butler, architect; Mr. Neville, city engineer; Professor Aldridge, Sir H. Jervis, Sir A. Clarke, and many other intelligent and influential gentlemen belonging to Dublin, and all of whom attested, by a formal resolution, passed on the spot where the experiments were made, that they had been perfectly successful, and recommended the general application of the apparatus, both for house purposes, and for general city drainage, as a simple, effective, and valuable invention. The model exhibited, comprised about 60 feet of house-drain, with, at the sewer extremity, a syphon trap, of the ordinary S shape, filled with water, and at the house extremity an ordinary beer-barrel (used to show how cheaply the apparatus might be fitted up). In the bottom of this barrel was a large valve, communicating through a tube with the house end of the drain, and a simple apparatus, it is said, was contained in the barrel, or cistern, by means of which, so soon as the cistern was filled (from the ordinary water-pipes and through a small pipe with a crane), the valve was opened, and the water, amounting to some thirty or forty gallons, suddenly flushed the drain, carrying with it stones, clay, or other contents, and expelling not only these, but the foul gases that might be contained in the drain, all of which, together with the water, are ejected successively as by a squirt or popgun through the S syphon-trap into the sewer, while the foul air is replaced by air from the house, and the drain is thus thoroughly ventilated as well as flushed. The crane attached to the supply-pipe is intended for use so as to fill the cistern only by dribblets, and once or twice every twenty-four hours, or as often or as seldom as may be desired, the whole apparatus being thus self-acting when once regulated.

TENDERS

For model lodging-houses, to be erected in Lisson-grove, for the Marylebone Association for Improving the Dwellings of the Industrious Classes. Quantities supplied. Messrs. Habershon, architects:—

	House in Lisson Grove.	Two Groups of two Houses each	Drains.
	£.	£.	£.
Cooper	2,360	2,343	86
Higgs	2,167	2,389	122
Rowland and Evans	1,995	1,875	82
Harmer	1,983	2,200	79
Willson	1,950	2,000	27
Haynes	1,910	2,155	70
Tolley	1,849	2,139	99
Johns	1,780	2,020	
Rudkin	1,697	1,987	
Clever and Stanger	1,689	1,944	95
Newby	1,680	1,979	80